



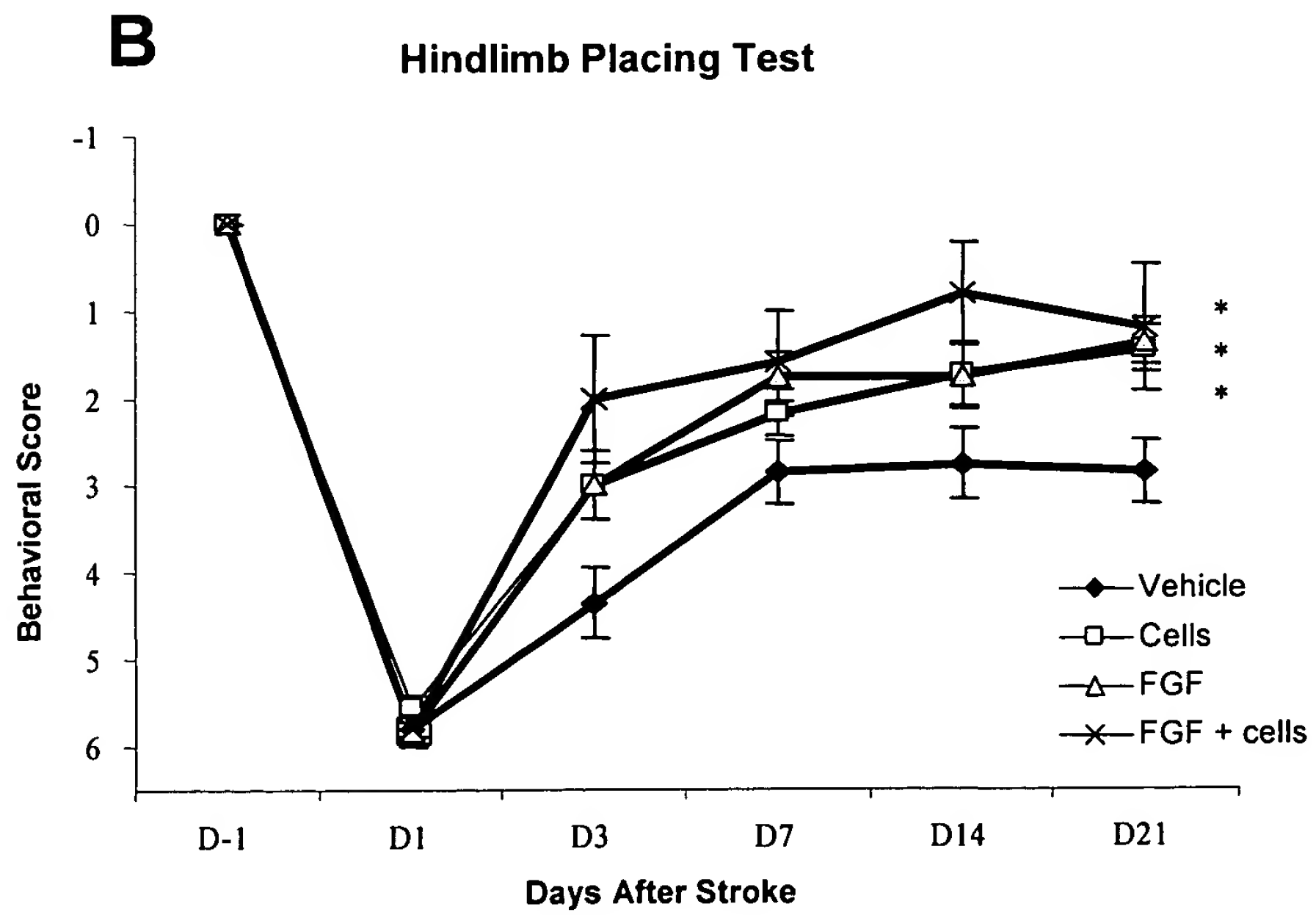
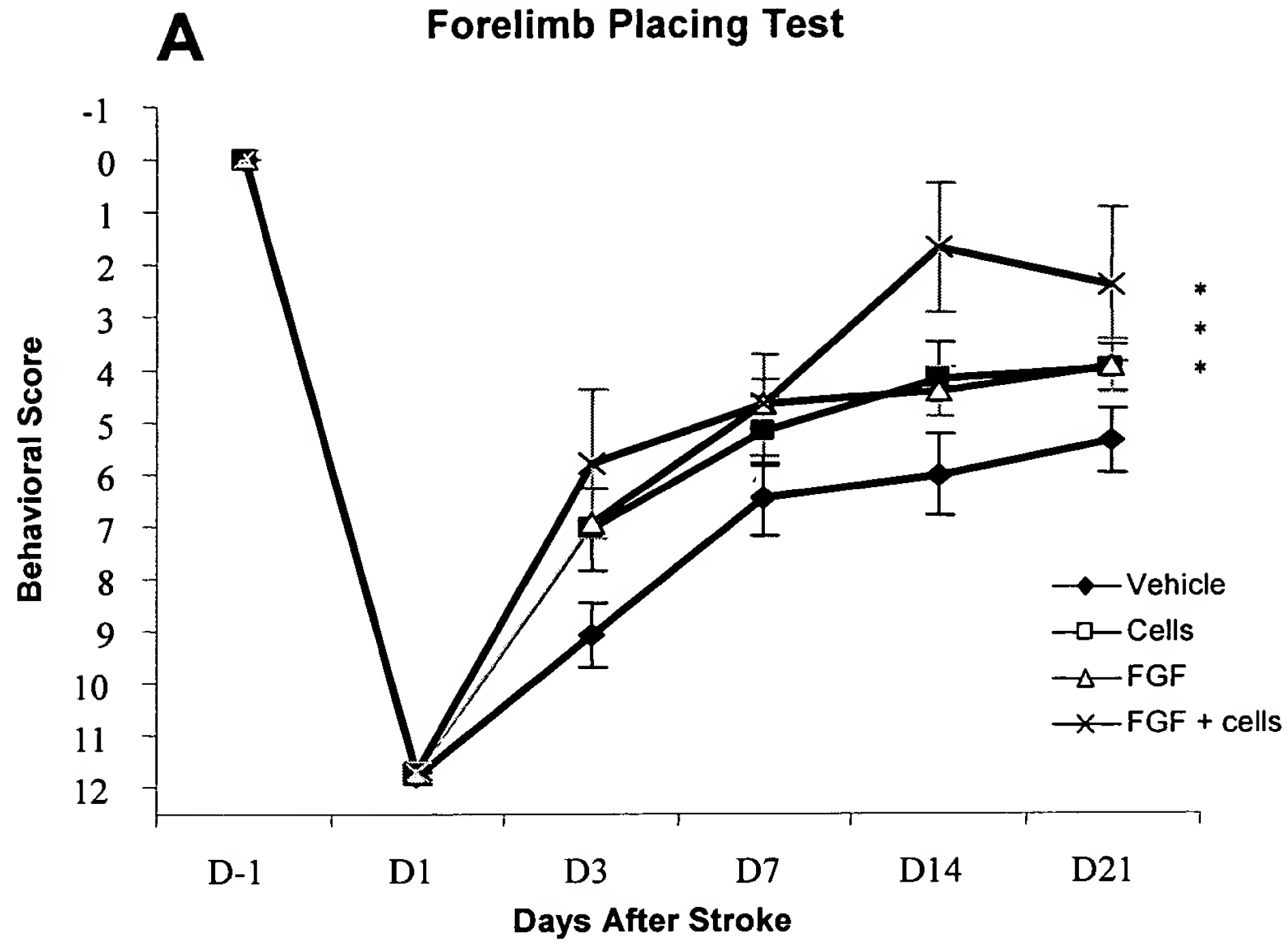
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Finklestein, et al.) Art Unit: 1636
)
Serial No.: 09/642,277) Examiner: Sullivan, Daniel M.
)
Filing Date: August 18, 2000)
) Attorney Docket No. CBA 003.01
For: Compositions and Kits for Promoting)
Recovery For Damage to the Central) Customer Number: 25181
Nervous System)

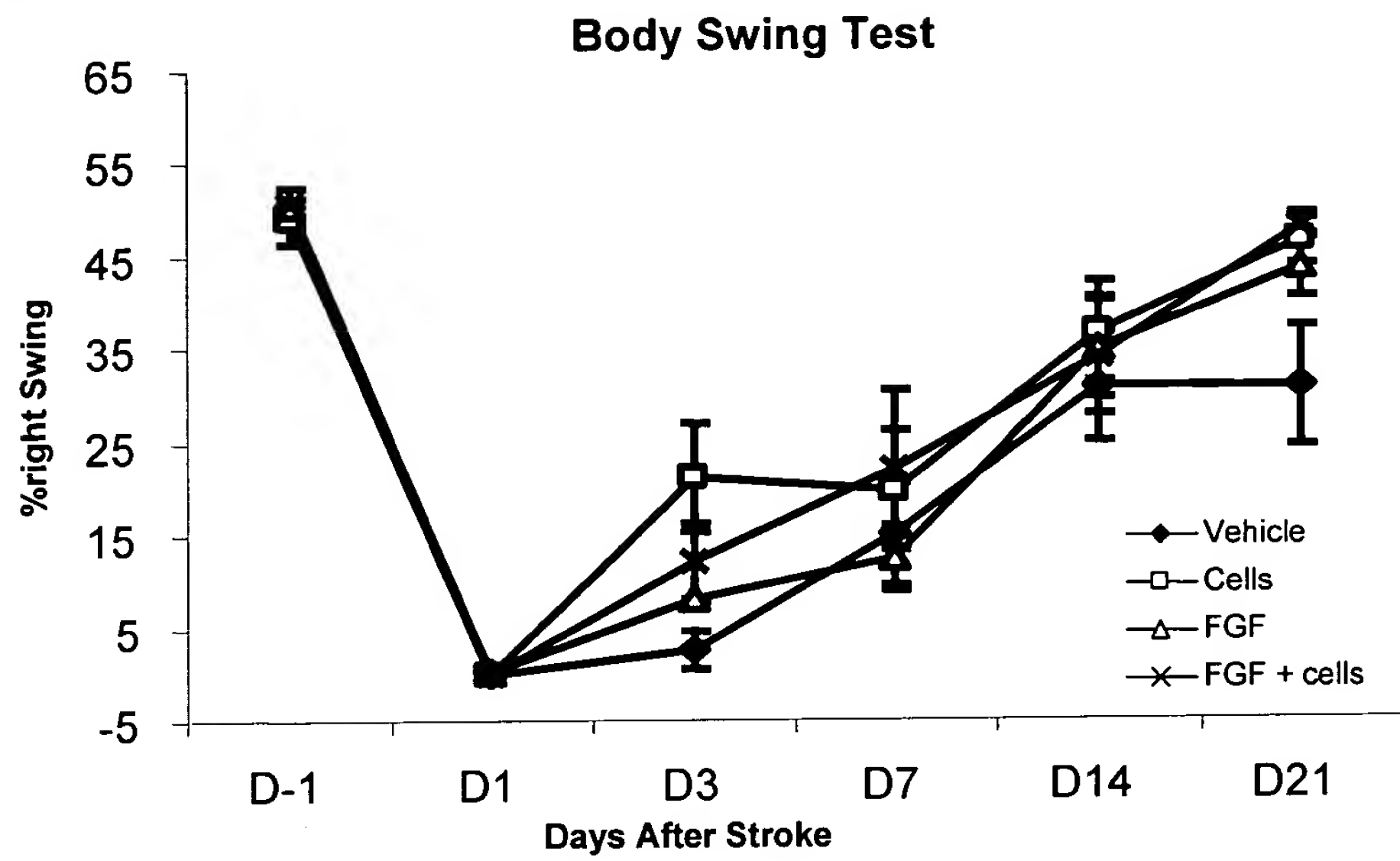
DECLARATION UNDER 37 C.F.R. § 1.132
OF INVENTOR SETH P. FINKLESTEIN

1. I, Seth P. Finklestein, of Needham, Massachusetts, hereby declare as follows:
2. I am presently Vice President of ViaCell, Inc. and Head of ViaCell Neuroscience. I received an M.D. from Harvard Medical School in 1974 and completed residency training in Neurology at the University of California at San Francisco and fellowship in Neurology and Radiology at the Massachusetts General Hospital. Prior to joining ViaCell, Inc., I was Associate Professor of Neurology at Harvard Medical School and a Neurologist at the Massachusetts General Hospital. A copy of my Curriculum Vitae is attached hereto as Appendix A.
3. I am an inventor of the above-referenced patent application, which describes and claims, among other things, methods of treating a subject with CNS damage comprising administering to the subject hematopoietic stem cells and a fibroblast growth factor (FGF), such that the conjoint administration of the hematopoietic stem cells and the FGF ameliorates effects of CNS ischemic damage.

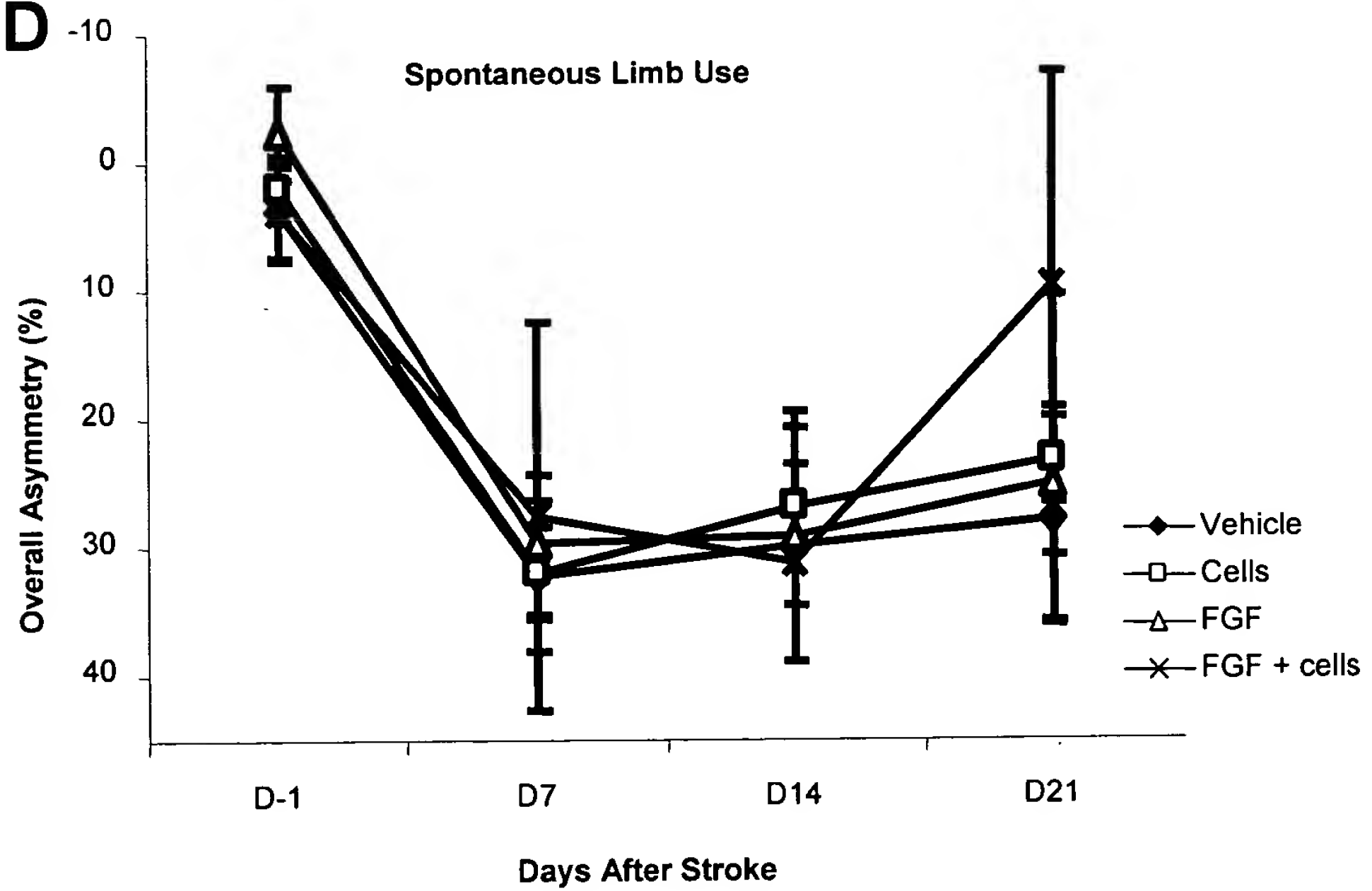
4. As discussed in further detail below, I have treated a rat with CNS damage by administering to the rat hematopoietic stem cells and an FGF, according to the techniques described in the patent application (e.g., at pages 14-45 of the specification).
5. Specifically, cells for administration were obtained from human umbilical cord blood, fetal blood which is known to contain hematopoietic stem cells. The cells were then enriched by selection for the absence of lineage markers as described at pages 29-30 of the specification, and were amplified as described on page 27.
6. FGF was prepared as a final concentration of 30 μ g/ml of covalently dimerized bFGF, containing 24 mM imidazole, 24 mM NaCl, 960 μ M Tris·HCl and 100 μ g/ml BSA, pH 7.4.
7. Focal cerebral infarcts were created in rats as described at pages 41-42 of the specification. Rats then received intravenously either (1) vehicle, (2) cells as described above ($2 \cdot 10^6$), (3) FGF as described above (150 μ g/kg over 3 hours), or (4) cells and FGF.
8. Following treatment, rats were evaluated for sensorimotor recovery by a number of behavioral tests as described at page 42 of the specification. The results of the evaluations are summarized in the following graphs:



C




D



7. The graphs show that cells alone, FGF alone, and especially the combination of cells and FGF significantly enhanced sensorimotor recovery of the contralateral limbs compared to vehicle in forelimb and hindlimb placing tests. (A) Forelimb placing test, contralateral (left) forelimb. (B) Hindlimb placing test, contralateral (left) hindlimb. (C) Body swing test. (D) Spontaneous limb use test. An asterisk indicates $p < 0.01$ compared with vehicle (Repeated measure ANOVA).
8. Thus, it was shown that the conjoint administration of hematopoietic stem cells and an FGF ameliorated effects of CNS ischemic damage.
9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title XVIII of the United States Code.

Date: 8/1/03


Seth P. Finklestein



CURRICULUM VITAE

PART 1: General Information

Date Prepared: July 7, 2003

Name: Seth P. Finklestein, M.D.

Office Address: Head, ViaCell Neuroscience
Vice President, ViaCell, Inc.
One Innovation Drive
Biotech III, 4th Floor
Worcester, MA 01605

Home Address: 604 Webster Street, Needham, MA 02494

E-Mail: sfinklestein@viacellinc.com

Phone: 508-793-1566, X-6186

Place of Birth: Philadelphia, PA

Fax: 508-793-2073

Education:

<i>Year</i>	<i>Degree</i>	<i>Institution</i>
1970	B.A.	Haverford College, Haverford, PA
1974	M.D.	Harvard Medical School, Boston, MA

Postdoctoral Training:

<i>Year</i>	<i>Title</i>	<i>Specialty/Discipline</i>	<i>Place of Training</i>
1974-75	Intern	Medicine	UCLA Hospital, Los Angeles CA
1975-78	Resident	Neurology	UCSF Hospitals, San Francisco, CA
1978-79	Clinical and Research Fellow	Neurology	Massachusetts General Hospital, Boston, MA
1978-80	Research Affiliate	Arteriosclerosis Center	Massachusetts Institute of Technology, Cambridge, MA
1979-80	Clinical and Research Fellow	Radiology	Massachusetts General Hospital, Boston, MA
1980-84	Research Fellow	Neuropharmacology	McLean Hospital, Belmont, MA

Licensure and Certification:

<i>Year</i>	<i>Type of License or Certification</i>
1975-78	California License Registration
1978-	Massachusetts License Registration
1979	Diplomat, American Board of Neurology and Psychiatry

Academic Appointments:

<i>Year</i>	<i>Academic Title</i>	<i>Institution</i>
1978-80	Clinical Fellow in Neurology	Harvard Medical School, Boston, MA
1980-84	Instructor in Neurology	Harvard Medical School, Boston, MA
1984-90	Assistant Professor of Neurology	Harvard Medical School, Boston, MA
1990-2001	Associate Professor of Neurology	Harvard Medical School, Boston, MA

Hospital or Affiliated Institution Appointments:

<i>Year</i>	<i>Title</i>	<i>Institution</i>
1978-79	Attending Neurologist	Spaulding (Massachusetts) Rehabilitation Hospital, Boston, MA
1979-91	Consultant in Neurology	Spaulding (Massachusetts) Rehabilitation Hospital, Boston, MA
1980-84	Consultant in Neurology	McLean Hospital, Belmont, MA
1980-85	Assistant in Neurology	Massachusetts General Hospital, Boston, MA
1984-89	Assistant Neurologist	McLean Hospital, Belmont, MA
1985-90	Assistant Neurologist	Massachusetts General Hospital, Boston, MA
1990-	Associate Neurologist	Massachusetts General Hospital, Boston, MA

Other Professional Positions and Major Visiting Appointments:

<i>Year</i>	<i>Position/Title</i>	<i>Institution</i>
1979-82	Visiting Physician	Clinical Research Center, Massachusetts Institute of Technology, Cambridge, MA
1995	Visiting Scientist	Clinical Research Center, Massachusetts Institute of Technology, Cambridge, MA
2001-	Vice President, and Head, Neuroscience Division	ViaCell, Inc., Boston, MA

Hospital and Health Care Organization Service Responsibilities:

<i>Year</i>	<i>Role</i>	<i>Institution</i>
1983-88	Teaching Attending Physician, Private Inpatient Neurology Service	Massachusetts General Hospital, Boston, MA
1985-	Attending Physician, Neurology Associates Outpatient Practice	Massachusetts General Hospital, Boston, MA
1985-90	Attending Physician, Inpatient Consultation Service	Massachusetts General Hospital, Boston, MA
1989-	Attending Physician, Stroke Service	Massachusetts General Hospital, Boston, MA
1990-94	Attending Physician, Inpatient (White 12) Neurology Service	Massachusetts General Hospital, Boston, MA
1994-	Attending Physician, Inpatient (CMF) Neurology Service	Massachusetts General Hospital, Boston, MA

2000- Attending Physcian, Inpatient
Consultation Service

Massachusetts General Hospital, Boston, MA

Major Administrative Responsibilities:

<i>Year</i>	<i>Title</i>	<i>Institution</i>
1987-89	Chief, Molecular and Experimental Neurology Laboratory	Mailman Research Center, McLean Hospital, Belmont, MA
1989-	Director, CNS Growth Factor Research Laboratory	Massachusetts General Hospital, Boston, MA
1995-	Co-Director	MGH/SRH Joint NeuroRecovery Program, Massachusetts General Hospital and Spaulding Rehabilitation Hospital

Major Committee Assignments:

<i>Year</i>	<i>Name of Committee</i>	<i>Role</i>	<i>Institution</i>
<i>National/International:</i>			
1984	National Institute of Neurological Disorders and Stroke	Site Visitor & Special Reviewer	National Institutes of Health
1988	National Institute on Aging	Ad Hoc Reviewer	National Institutes of Health
1989	Alzheimer Disease Research Center Ad Hoc Review Committee	Member	National Institutes of Health
1989	Neurology A Study Section	Ad Hoc Reviewer	National Institutes of Health
1991-95	Brain Study Review Committee	Member	American Heart Association
1991-94	Committee on Student Scholarships	Member	Stroke Council, American Heart Association
1993	Organizing Committee	Member	19th Princeton Conference on Cerebrovascular Disease
1994	International Advisory Board	Member	XVII International Symposium on Cerebral Blood Flow and Metabolism
1995	Ad Hoc Reviewer	Reviewer	National Science Foundation
1995-98	Research Fellowship Review Committee	Member	National Stroke Association
1995	Fellowship Peer Review Committee	Ad Hoc Member	American Heart Association
1996-	External Scientific Advisory Committee	Member	Research Center for Brain Trauma, University of Miami School of Medicine
1996	International Advisory Board	Member	Brain 97, XVIII International Symposium on Cerebral Blood Flow and Metabolism
1996-99	Brain Study Review Committee	Member	American Heart Association
1997-	Research Grants	Reviewer	Human Frontier Science Program
1998-	Program Project Grant	External Advisor	The Miami Project to Cure Paralysis

1999-	Bugher Foundation Review Committee	Member	American Heart Association
1999	International Advisory Board	Member	Brain 99, IX International Symposium on Cerebral Blood Flow and Metabolism
2000	International Advisory Board	Member	Brain 01, X International Symposium on Cerebral Blood Flow and Metabolism
2001	Advisory Board	Member	9 th International Symposium on the Pharmacology of Cerebral Ischemia, Marburg, Germany
2001	Grant Reviewer		Jacob and Valeria Langeloth Foundation
2003	Abstract Review Committee		XXIst International Symposium of Cerebral Blood Flow, Metabolism, and Function

Regional:

1994	Research Peer Review Committee	Ad Hoc Member	American Heart Association Massachusetts Affiliate
1995-1997	Research Peer Review Committee	Member	American Heart Association Massachusetts Affiliate

Hospital and Medical School:

1992,98	Resident Selection Committee	Member	Department of Neurology, Massachusetts General Hospital
1992	Fund Raising Committee	Chairman	Neuroscience Center, Massachusetts General Hospital
1993-	Subcommittee on Review of Research Proposals	Member	Massachusetts General Hospital
1993-	Senior Honor Theses	Reviewer	Harvard Medical School
1997-	Introduction to Neuroscience	Reviewer	Harvard Medical School
1998	Strategic Planning Subcommittee, Subcommittee on Review of Research Proposals	Member	Massachusetts General Hospital

Professional Societies:

<i>Year</i>	<i>Society</i>
1976-	American Academy of Neurology
1980-	American Heart Association Stroke Council
1981-	American Heart Association, Massachusetts Affiliate
1984-	Society for Neuroscience
1985-	Fellow, American Heart Association Stroke Council
1986-	Boston Society of Psychiatry and Neurology
1991-97	Member, Public and Professional Information Committee, American Academy of Neurology
1992-	Massachusetts Neurological Association
1993-	Neurotrauma Society
1994-	American Neurological Association

Consultantships:

<i>Year</i>	<i>Company</i>
1995-	Scios, Inc., Mountain View, CA
1996-	Creative Biomolecules, Inc., Hopkinton, MA
1996-	Wyeth-Ayerst Pharmaceuticals (American Home Products), Radnor, PA
1997	Biogen, Inc., Cambridge, MA
1998-	Eli Lilly Co., Indianapolis, IN
1998-	AstraZeneca Pharmaceuticals, Inc., Wilmington, DE
2000-	Member, Scientific Advisory Board, BioStream, Inc., Cambridge, MA
1999-	Member, Scientific Advisory Board, eNOS Pharmaceuticals, Inc., Cambridge, MA
2000-	Member, Scientific Advisory Board and Board of Directors, Seacoast Pharmaceuticals, Inc., Boston, MA
2001	Member, Scientific Advisory Board, Neurological Models, Inc., Woburn, MA

Editorial Boards:

<i>Year</i>	<i>Role</i>	<i>Name of Journal</i>
1990-96	Member	Restorative Neurology and Neuroscience
1991-93	Member	Neurology Chronicle
1998-	Member	Restorative Neurology and Neuroscience

Ad Hoc Reviewer:

American Journal of Pathology; Annals of Neurology; Biochimica et Biophysica Acta; Brain Research; Cerebrovascular Diseases; Continuum; Critical Care Medicine; European Journal of Pharmacology; European Journal of Neuroscience; European Neurology; Experimental Brain Research; Experimental Neurology; JAMA; Journal of Cerebral Blood Flow and Metabolism; Journal of Clinical Investigation; Journal of Neurochemistry; Journal of Neurocytology; Journal of Neuroscience; Journal of Neurotrauma; Journal of Nuclear Medicine; Molecular Brain Research; Nature Medicine; Neuropharmacology; Neuroscience, New England Journal of Medicine; Pharmacology; Biochemistry and Behavior; Science; Stroke

Awards and Honors:

<i>Year</i>	<i>Name of Award</i>
1969	Phi Beta Kappa
1970	Magna cum Laude with Honors in Biology, Haverford College
1980-85	Clinician-Scientist Award, American Heart Association

Other Activities:

1999-	President, NeuroRecovery Research, Inc., Needham, MA
1999-2001	President and Chief Scientific Officer, Cerebrotec, Inc., Needham, MA
2001-	Head, ViaCell Neuroscience, Vice President, ViaCell, Inc., Worcester and Boston, MA

PART II: Research, Teaching, and Clinical Contributions

A. Narrative Report of Research, Teaching and Clinical Contributions

Dr. Finklestein's work has centered on the search for new treatments for acute stroke and stroke recovery, with an emphasis on polypeptide growth factors. In particular, his group were the first to show that basic fibroblast growth factor (bFGF), a neurotrophic polypeptide, reduces infarct (stroke) volume in animals when given within a few hours after the onset of focal cerebral ischemia. These preclinical studies formed the basis of a human clinical safety and efficacy trials of intravenous bFGF in acute stroke, organized by Dr. Finklestein and collaborators. More recently, Dr. Finklestein's group showed that the delayed intracisternal administration of growth factors (including bFGF and BMP-7) does not reduce infarct size, but does enhance neurological recovery after focal stroke in rats, apparently through stimulation of new neuronal sprouting and synapse formation in uninjured parts of the brain. Other recent work in Dr. Finklestein's laboratory shows that transplantation of neural stem cells also enhances stroke recovery in animals; this effect is enhanced by the co-administration of growth factors. Clinical trials of growth factors and neural stem cells for stroke recovery are anticipated. Descriptive clinical studies on stroke and stroke recovery have complemented this basic and translational research.

B. Funding Information

<i>Years Covered</i>	<i>Funding Source</i>	<i>PI/Co-PI</i>	<i>Grant Title</i>
1980-1985	American Heart Association	P.I.	Psychiatric Disturbance After Stroke and Its Treatment
1985-1988	American Heart Association	P.I.	Biochemical Pharmacology of Focal Cerebrocortical Injury
1986-1987	Whitaker Foundation	Co-P.I.	Bioactivity and Characterization of Factors from the Injured Lower Vertebrate CNS that Promote Outgrowth of Mammalian Neurons
1987-1988	McLean Hospital BRSG	P.I.	Growth Factors in CNS Injury and Repair
1987-1988	Milton Fund	P.I.	Milton Fund
1988-1991	American Heart Association	P.I.	Fibroblast Growth Factors in CNS Injury and Repair
1988-1990	NIH/NIA R01-AG08207	P.I.	Fibroblast Growth Factors in the Aging Brain
1989-1994	NIH/NINDS PO1-NS10828	P.I. (Project Leader)	Angiogenic Factors in Brain
1991-1992	Synergen Corporation	P.I.	Studies Using the Synergen Proprietary Protein
1991-1994	American Heart Association	P.I.	Fibroblast Growth Factors in CNS Injury and Repair

1991-1995	NIH/NIA R01-AG08207	P.I.	Fibroblast Growth Factors in the Aging Brain
1993-1994	Creative Biomolecules	P.I.	OP-1 Treatment of Stroke
1994-1995	Interneuron Pharmaceuticals	P.I.	A Placebo-Controlled Study to Determine the Effects of 500 mg 1,000 mg, and 2,000 mg Citicoline in Ischemic Stroke Patients
1995-1996	Scios-Nova Corporation	P.I.	Optimal Dose and Therapeutic Window of Intravenous bFGF in the Treatment of Experimental Stroke
1994-1999	NIH/NINDS PO1 NS10828	P.I. (Project Leader)	Growth Factor Neuroprotection in Focal Cerebral Ischemia
1996-1997	Scios-Nova Corporation	P.I.	A Phase I/II Safety Study of FIBLAST trafermin (basic fibroblast growth factor, bFGF) in the Treatment of Patients with Acute Thromboembolic Cerebrovascular Occlusion
1996-1997	Creative Biomolecules	P.I.	OP-1 Treatment for Stroke Recovery
1997-1998	Ontogeny, Inc.	P.I.	Pilot Studies of Sonic Hedgehog Protein in Reducing Infarct Size After Stroke
1997-1998	Creative Biomolecules	P.I.	Further Preclinical Studies Using OP-1 as Treatment for Stroke Recovery
1997-1999	Wyeth-Ayerst Pharmaceuticals	P.I.	Further Preclinical Studies Using bFGF (FIBLAST) in the Treatment of Stroke
1999-2000	Creative Biomolecules	P.I.	Further Studies of OP-1 for Stroke Recovery
1999-2001	NIH/NINDS P01 NS10828 (Program Project)	P.I. (Project Leader)	Growth Factors Influence Recovery from Stroke

C. Report of Current Research Activities (bench research, clinical trials, outcome studies, efficacy studies as applicable).

Ongoing research in Dr. Finklestein's laboratory is aimed primarily at growth factor and stem cell treatment for acute stroke and stroke recovery. Specifically, ongoing studies are aimed at discovering the mechanisms of the neuroprotective properties of bFGF, esp. its anti-apoptotic effects. Other pharmacological, histological, and mechanistic studies continue to explore the effects of growth factors (including bFGF and OP-1) and neural stem cells in enhancing stroke recovery. These studies have been supported by grants from the NIH (NS10828) and industrial sources (Wyeth-Ayerst Pharmaceuticals and Creative BioMolecules, Inc.). Prior to joining ViaCell, Inc., Dr. Finklestein served as a consultant to several biotech and pharmaceutical companies regarding preclinical strategy and clinical trial design in stroke.

D. Report of Teaching

1. Local Contributions

a. Medical School Courses:

1978-1979	Laboratory Instructor in Neuropathology, Harvard Medical School, Instructor, 20-30 students, 4 hours/week for 6 weeks
1979-1980	Introduction to Clinical Medicine, Harvard Medical School, Instructor, 10 students, 4 hours/week for 4 weeks
1984-1986	Neurology-Neuropathology 709.0, Harvard Medical School, Instructor, 20-30 students, 4 hours/week for 6 weeks
1996-	HST 130, Introduction to Neuroscience, Lecturer, 60 students, 1 clinical presentation

b, c & d. Graduate Medical Courses, Invited Teaching Presentations, and Continuing Medical Education Courses:

1981	Current Concepts and Management of Cerebrovascular Disease, Massachusetts General Hospital, Lecturer, 100 students, 4 hours
1985	Neurological Intensive Care, Massachusetts General Hospital, Lecturer, 100 students, 4 hours
1986	Neurology Postgraduate Course, Massachusetts General Hospital, Lecturer, 100 students, 4 hours
1987	Neuroscience Course, Boston Society of Psychiatry and Neurology, Lecturer, 50 students, 4 hours
1990	Principles and Practice of Rehabilitation Medicine, Massachusetts General Hospital, Lecturer, 100 students, 4 hours
1996	Progress in Angioscopy 1996, Harvard-Deaconess Surgical Service, Faculty, 100 students, 1 hour
1997-	Stroke: Update and Comprehensive Review, Partners Cerebrovascular Service, Faculty, 100 students, 1 hour
1997	New Advances in Stroke Treatment, Spaulding Rehabilitation Hospital, Faculty, 100 attendees, 1 hour

e. Advisory and Supervisory Responsibilities in Clinical or Laboratory Setting:

1983-1988	Private Inpatient Neurology Service, Massachusetts General Hospital, Teaching Attending Physician, 3-5 students, 4 hours/day for 1 month a year
1985	Neurology Associates Outpatient Practice, Massachusetts General Hospital,

1985-1990	Attending Physician, 3-5 residents, 4 hours a month Inpatient Consultation Service, Neurology Service, Massachusetts General Hospital, Attending Physician, 1 resident, 4 hours/day for 1 month a year
1989-	Stroke Service, Massachusetts General Hospital, Attending Physician, 1-2 residents/fellows, 4 hours/day for 2-3 months a year
1990-1994	Inpatient (White 12) Neurology Service, Massachusetts General Hospital, Attending Physician, 4 residents, 3 students, 4 hours/day for 1 month a year
1994-	Inpatient (CMF) Neurology Service, Massachusetts General Hospital, Attending Physician, 4 residents, 3 students, 4 hours/day for 1 month a year

f. Teaching Leadership Role in Department/Affiliated Institution Medical School:

None

g. Research Postdoctoral Fellows Supervised:

Cornelio Caday, Ph.D.; Current Position: Assistant Professor, Department of Neurosurgery, LSU Medical Center, Shreveport, LA

David Berlove, Ph.D.; Current Position: Staff Scientist, GelMed, Inc., Bedford, MA

Ahmed Kemmou, M.D.; Current Position: Surgeon, Morocco

Bilal Shanti, M.D.; Current Position: Internist

Jing Mei Ren, M.D.; Current Position: Instructor in Neurology, Massachusetts General Hospital, Boston, MA

Ke Chen, Ph.D.; Current Position: Internist

Steven Cramer, M.D.; Current Position: Assistant Professor of Neurology, University of Washington, Seattle, WA

Takakazu Kawamata, M.D.; Current Position: Department of Neurosurgery, Neurological Institute, Tokyo Women's Medical College, Tokyo, Japan

Iknur Ay, M.D., Current Position: Research Fellow in Neurology, Massachusetts General Hospital, Boston, MA

Hiroshi Sugimori, M.D., Current Position: Research Fellow in Neurology, Massachusetts General Hospital, Boston, MA

Hiroshi Nakajima, M.D., Current Position: Research Fellow in Neurology, Massachusetts General Hospital, Boston, MA

Kuniyasu Wada, M.D., Current Position: Research Fellow in Neurology, Massachusetts General Hospital, Boston, MA

Faith Ozdag, M.D., Current Position: Research Fellow in Neurology, Massachusetts General Hospital, Boston, MA

Undergraduate Students and Research Technicians Supervised:

Andrew Stoll, Boston University

Kenneth Moya, Harvard University

Glen Rosen, University of Connecticut

Dennis Francouer, Northeastern University

Andrew Olson, Harvard University

Paul Apostolides, Stanford University

James Prosser, Dartmouth Medical School

Matthew Philips, Oberlin College

Armineh Mirzabegian, Wellesley College

Jonathan Foster, University of Pennsylvania

Ellen Clifford, Mount Holyoke College

Tuyen Do, Dickinson College

Linda McMorrow, Holy Cross College

Elizabeth Speliotis, Harvard Medical School
 Jens Weise, University of Magdeburg Medical School
 David Lin, University of Buffalo Medical School
 Dana Sietsma, Bridgewater State College
 Heather Speller, Boston College

2. Regional, National or International Contributions (since 1992):

<i>Year</i>	<i>Title/Name of Organization</i>
1992	"The Potential of Neurotrophic Growth Factors as Neuroprotective Agents in Stroke", 18th Princeton Conference on Cerebrovascular Diseases, Rochester, MN
1992	"Growth Factors in Injured Brain", Growth Factors, Peptides, and Receptors '92, George Washington University School of Medicine, Washington, DC
1992	"Gene Expression in Stroke", World Congress of Stroke, Washington, DC
1993	"Growth Factors in Stroke", Recent Advances in the Diagnosis, Prevention, and Treatment of Ischemic Stroke, Philadelphia, PA
1993	"Growth Factor Symposium", Co-Chairman, Annual Meeting of Neurotrauma Society, Washington, DC
1993	"The Role of Polypeptide Growth Factors in Brain Injury and Ischemia", Pharmacology Department Seminar, Tufts University School of Medicine, Boston, MA
1994	Grand Rounds, Neurology Department, University of Massachusetts Medical School, Worcester, MA
1994	Co-Chairman, Session on Growth Factors, 19th Princeton Conference on Cerebrovascular Diseases, Boston, MA
1994	"Potential Use of Polypeptide Growth Factors in the Treatment of Stroke Neuropharmacology Course, American Academy of Neurology Meetings, Washington, DC
1994	"Trophic Factors in the Treatment of Ischemia", Eric K. Fernstrom Symposium, Lund, Sweden
1994	"Molecular Biology of Growth Factors in the Brain", Advances in the Treatment of Neurologic Disorders, Brown University, Newport, RI
1995	"Potential Usefulness of Polypeptide Growth Factors in the Treatment of Stroke", Seminar, Division of Cardiovascular Research, St. Elizabeth's Hospital, Boston, MA
1995	"Gene Therapy of Stroke", Gene Therapy for Central Nervous System Disorders, Division of Neurosurgery, University of Pennsylvania, Philadelphia, PA
1995	Speaker, Brain Plasticity Symposium, Satellite Symposium to XVIth International Symposium on Cerebral Blood Flow and Metabolism, Dusseldorf, Germany
1995	"Potential Usefulness of Polypeptide Growth Factors in the Treatment of Stroke", Neurology Grand Rounds, SUNY Stony Brook, Stony Brook, NY
1996	"Angiogenic Factors in Brain," 29th Annual Winter Conference on Brain Research, Snowmass, CO
1996	"Neuroprotective Actions of Trophic Factors in Brain Ischemia Models," 20th Princeton Conference on Cerebrovascular Diseases," Memphis, TN
1996	"Polypeptide Growth Factors in the Treatment of Stroke," Cardiovascular Research Seminar, St. Elizabeth's Hospital, Boston, MA
1996	Seminar, Vascular Biology Research Group, Children's Hospital, Boston, MA
1996	Presentation, Scientific Advisory Board, Biogen, Inc., Cambridge, MA
1996	Seminar, Creative Biomolecules, Hopkinton, MA
1996	Neurosurgical Grand Rounds, Children's Hospital, Boston, MA
1996	"Basic Fibroblast Growth Factor in the Treatment of Stroke," Department of Neurology, Southwestern Vermont Medical Center, Bennington, VT
1996	Neuroscience Research Seminar, McLean Hospital, Belmont, MA
1996	"Cerebroprotective Strategies in Acute Cerebral Ischemia," Symposium on Cerebrovascular Disease and Brain Ischemia, Yale University School of Medicine, New Haven, CT

- 1996 "Polypeptide Growth Factors in Stroke," 6th International Symposium on Pharmacology of Cerebral Ischemia, Marburg, Germany
- 1996 "Molecular Biology and Growth Factors in Ischemic Injury," FASEB Summer Research Conferences, Copper Mountain, CO
- 1996 Invited Speaker, VIIth Clinical Research Seminar, The Foundation of Medical Professionals Alliance in Taiwan, Taipei, Taiwan
- 1996 "Molecular Treatments for Stroke," Rhea and Louis D. Boshes Visiting Professor in History of Neurology, University of Illinois at Chicago, Chicago, IL
- 1996 "Growth Factor Therapy for Stroke," Neurology Grand Rounds, Boston University Medical Center, Boston, MA
- 1996 "New Molecular Treatments for Stroke and Head Injury," Neurological Progress Forum, The National Council on Spinal Cord Injury, Boston, MA
- 1996 "Growth Factors in CNS Ischemia and Trauma: The Case of bFGF," SmithKline Beecham Pharmaceuticals Research Symposium, Collegeville, PA
- 1996 Chairman, Session on Cerebral Ischemia: Neuroprotection, Society for Neuroscience Annual Meeting, Washington, D.C.
- 1997 Chairman, Session on Recovery and Epidemiology, American Heart Association Stroke Meetings, Anaheim, CA
- 1997 Speaker, Neurology Grand Rounds, Department of Neurology, Yale University School of Medicine, New Haven, CT
- 1997 Speaker, Division of Neurological Surgery Grand Rounds, Northwestern University Medical School, Chicago, IL
- 1997 Seymour Advocate Lecturer in Neurology, New York Hospital/Cornell Medical Center, New York, NY
- 1997 Speaker, Second International Conference on Bone Morphogenic Proteins, Sacramento, CA
- 1997 Speaker, Neurology Grand Rounds, Brigham and Women's Hospital, Boston, MA
- 1997 Speaker, International Business Communications, Conference on Growth Factors, Boston, MA
- 1997 Speaker, XIV Annual Meeting, International Society for Heart Research, Vancouver, Canada
- 1997 Speaker, Annual Meeting, Astra Canadian Neuroprotection Network, Toronto, Canada
- 1997 Speaker, U.S., Canadian and European Investigators' Meetings for Phase II Clinical Trials of FIBLAST in Acute Stroke
- 1998 Chairman, Symposium on "Molecular Basis of Recovery After Stroke," 23rd International Joint Conference on Stroke and Cerebral Circulation, Orlando, FL
- 1998 Speaker, Spinal Cord Injury Conference, West Roxbury Veterans Hospital
- 1998 Speaker, PharmacoGenesis: Postgenomic Drug Discovery Through Developmental Biology, Boston, MA
- 1998 Co-Chair, Cerebrovascular Disease: Prognosis/Recovery session, American Academy of Neurology Annual Meeting, Minneapolis, MN
- 1998 Speaker, First Joint Meeting of the European Neuropeptide Club and the Summer Neuropeptide Conference, Gent, Belgium
- 1998 Speaker, 21st Princeton Conference on Cerebrovascular Disease, St. Louis, MO
- 1998 Speaker, Advances in Acute Management of Stroke, Presbyterian Hospital, Dallas, TX
- 1998 Speaker, Conference on Stroke Therapy, Whittier Rehabilitation Hospital, Westborough, MA
- 1998 Speaker, Symposium on Neuroprotection: Does it Work in Stroke?, Massachusetts Institute of Technology Clinical Research Center, Cambridge, MA
- 1998 Speaker, Press Seminar: Brain & Psyche, The Neurobiology of the Self, Massachusetts General Hospital and Whitehead Institute, Boston and Cambridge, MA
- 1998 Speaker, "Stroke: Therapeutic Approaches," Society for Medicines Research Conference, London, England
- 1998 Speaker, 7th International Symposium on Pharmacology of Cerebral Ischemia, Marburg, Germany
- 1998 Speaker, Brain Research Seminar, University of Innsbruck, Innsbruck, Austria

- 1998 Speaker, 16th Annual National Neurotrauma Society Symposium, Los Angeles, CA
- 1999 Speaker, Winter Conference on Brain Research, Snowmass, CO
- 1999 Speaker, Consensus Conference on Drug Development for Stroke, NeuroRecovery Research Inc., Orlando, FL
- 1999 Speaker, Neurology Grand Rounds, Boston University School of Medicine, Boston, MA
- 1999 Speaker, Astra Pharmaceuticals Stroke Advisory Board, San Juan, Puerto Rico
- 1999 Faculty, Cerebrovascular Disease Course, American Academy of Neurology Annual Meeting, Toronto, Canada
- 1999 Speaker, Eighth European Stroke Conference, Venice, Italy
- 1999 Speaker, Fifth IBRO World Congress of Neuroscience, Jerusalem, Israel
- 1999 Speaker, Neurology Grand Rounds, Cornell University Medical Center, New York, NY
- 2000 Member, Program Committee, Speaker and Session Chair, Neuronal Plasticity: The Key to Stroke Recovery, Kananaskis, Alberta Canada
- 2000 Participant, NIH Workshop: Post-Resuscitation and Initial Utility in Life Saving Efforts (PULSE), Leesburg, VA
- 2000 Speaker, Stroke Academic Industry Roundtable II (STAIR II) Meeting, Redwood City, CA
- 2000 Speaker, 8th International Symposium on Pharmacology of Cerebral Ischemia, Marburg, Germany
- 2000 Speaker, Stroke Update: Acute Care and Rehabilitation Issues, Whittier Rehabilitation Hospital Westborough, MA
- 2000 Speaker, Spinal Cord Injury Medicine, Ninth Symposium, Spinal Cord Injury Service, West Roxbury VA Medical Center, Dedham, MA
- 2001 Speaker, International Conference on Research Advances in Cerebrovascular Disease, Guangzhou, China
- 2001 Participant, NIH Stroke Progress Review Group Roundtable Meeting, Englewood, CO
- 2001 Speaker, 11th Nordic Meeting on Cerebrovascular Diseases, Kuopio, Finland
- 2001 Speaker, Motor Recovery After Stroke Symposium, Rehabilitation Institute of Chicago, Chicago, IL
- 2001 Speaker, CNS Stroke Workshop, Berlex Biosciences, Richmond, CA
- 2001 Speaker, Ninth International Neural Regeneration Symposium, Asilomar, CA
- 2002 Speaker, 27th International Stroke Conference, San Antonio, TX
- 2002 Speaker, Keystone Symposium on Neural Regeneration, Taos, NM
- 2002 Speaker, International Stroke Symposium, Kansas City, MO
- 2002 Speaker, 6th Congress of the European Federation of Neurological Societies, Vienna, Austria
- 2002 Speaker, Satellite Symposium of the 6th Congress of the EFNS, Vienna, Austria
- 2003 Speaker, ASPET-Ray Fuller Symposium, San Diego, CA

E. Report of Clinical Activities

1. Description of clinical practice (field, are of major focus, etc.) site(s) of practice (private office, HMO, teaching hospital, etc.).

Prior to joining ViaCell, Inc., Dr. Finklestein was a full-time staff member of the Neurology Service at the Massachusetts General Hospital (MGH), and was a member of the Stroke Service division of the Neurology Service. His clinical responsibilities included a one-half day per week outpatient office practice; two months per year attending on the inpatient Stroke Consultation Service; and one month per year attending on the general neurology inpatient (CMF) service. Dr. Finklestein currently retains his half-day per week outpatient practice at MGH.

2. Patient load (complexity, if appropriate).

Dr. Finklestein's outpatient practice (5-8 patients/week) comprises high-complexity patients with cerebrovascular disease as well as general neurological patients. Patients seen on the Stroke Consultation Service (approx. 4-6/day) included high-complexity inpatients with cerebrovascular disease. Patients seen on

the CMF Neurology Service (approx. 8-12/day) are high-complexity included patients with stroke or other neurological diseases.

3. Clinical contributions (e.g. new methods of clinical care, treatment, care delivery).

Dr. Finklestein's laboratory has pioneered the concept of growth factor treatment for stroke. In particular, based on preclinical work done in his laboratory, Dr. Finklestein and colleagues conducted the first human clinical safety trials of basic fibroblast growth factor (bFGF) for the treatment of acute stroke, resulting in large-scale efficacy trials of this treatment. These trials were ultimately suspended in the U.S. due to safety concerns, although the drug was safe in European trials at a lower dose. Efforts are currently underway to reactivate trials of bFGF as a stroke recovery drug. Moreover, trials of other growth factors as well as neural stem cells as stroke recovery treatments are anticipated within the next 1-2 years.

4. Other relevant information about clinical role.

Dr. Finklestein has acted as a mentor to several clinical trainees on the Neurology Service at MGH. These trainees have included Dr. Steven Greenberg, whose major research interest is cerebral amyloid angiopathy, and Dr. Steven Cramer, whose major research interest is stroke recovery.

PART III: Bibliography

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Cramer SC, Finklestein SP, inventors; Digital motor event recording system. US patent #5,885,231. 1999 March 23.

Finklestein SP, inventor; Administration of polypeptide growth factors following central nervous system ischemia or trauma. Pending.

Charette MF, Finklestein SP, inventors; Methods for enhancing functional recovery following central nervous system ischemia or trauma. Pending.

Finklestein SP, inventor; Treatment of central nervous system ischemia or trauma with epidermal growth factor-like polypeptides. Pending.

Finklestein SP, Snyder EY, inventors; Methods, compositions and kits for promoting recovery from damage to the central nervous system. Pending.

Kraus M, Finklestein SP, Clark P, inventors; Methods for improving central nervous system functioning. Pending.

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